

Claims
sub 2'
[c1]

1. A method for processing a compressed bitstream comprising video data, the method comprising:

obtaining motion information related to the video data, the motion information comprising a set of motion vectors;

performing motion compensation on the video data using the reference sub-region stored on the first memory.

2. The method of claim 1 wherein the first memory source is an on-chip memory source.

3. The method of claim 1 wherein storing the reference sub-region in the first memory comprises performing a direct memory access based on the motion vector.

4. The method of claim 3 wherein the second memory source is an off-chip memory source and the direct memory access includes accessing the second memory source.

5. The method of claim 1 further comprising storing the motion information in the first memory.

6. The method of claim 1 wherein obtaining motion information comprises extracting and decoding the set of motion vectors from the compressed bitstream.

7. The method of claim 1 wherein the time that the reference sub-region is stored in the first memory before performing motion compensation using the set of motion vectors comprises the time required for to complete a direct memory access to store the reference sub-region in the first memory.

[c8] 8. The method of claim 1 wherein the time that the reference sub-region is stored in the first memory before performing motion compensation using the set of motion vectors comprises an estimated time for a processor to reconstruct one macroblock.

[c9] 9. The method of claim 1 wherein storing the reference sub-region further comprises storing multiple reference sub-regions.

[c10] 10. The method of claim 9 wherein the multiple reference sub-regions are included in a reference window, the reference window comprising a set of reference window sub-regions.

[c11] 11. The method of claim 10 further comprising:
creating the reference window comprising the set of reference window sub-
regions, the set of reference window sub-regions including the reference sub-
region identified by the set of motion vectors; and
storing the set of reference window sub-regions in the first memory source.

[c12] 12. The method of claim 11 wherein the reference window has a trapezoidal array of reference window portions.

[c13] 13. The method of claim 12 the reference sub-region identified by the motion information is the upper left reference window sub-region in the trapezoidal array.

[c14] 14. The method of claim 1 wherein the video data comprises a macroblock.

[c15] 15. The method of claim 1 further comprising converting the motion information to an DMA instruction.

[c16] 16. The method of claim 1 further comprising obtaining motion information from a second compressed bitstream and performing motion compensation on video data included in the second compressed bitstream.

[c17] 17.A method for processing a compressed bitstream comprising video data, the method comprising:
parsing a portion of the compressed bitstream before motion compensation on

video data included in the portion;
obtaining motion information related to the video data, the motion information comprising a set of motion vectors;
storing a set of reference window sub-regions included in a reference window in a first memory before motion compensation using the motion information, wherein the set of motion vectors references a reference window sub-region in the set of reference window sub-regions; and
performing motion compensation on the video data using the reference sub-region stored on the first memory.

[c18] 18.The method of claim 17 further comprising:
creating the reference window comprising the set of reference window sub-regions, the set of reference window sub-regions including the reference sub-regions identified by the motion information; and
storing the set of reference window sub-regions in the first memory source.

[c19] 19.The method of claim 17 wherein the reference window has a trapezoidal array of reference window sub-regions.

[c20] 20.The method of claim 17 the reference sub-region identified by the motion information is the upper left reference window sub-region in the reference window.

[c21] 21.A system for processing a compressed bitstream comprising video data, the system comprising:
means for parsing a portion of the compressed bitstream before motion compensation on video data included in the portion;
means for obtaining motion information related to the video data, the motion information comprising a set of motion vectors;
means for storing a reference sub-region identified by the motion information in a first memory before performing motion compensation using the set of motion vectors; and
means for performing motion compensation on the video data using the reference sub-region stored on the first memory.

[c22] 22. The method of claim 21 further comprising means for extracting and decoding the motion information from the compressed bitstream.

[c23] 23. The method of claim 21 further comprising means for creating a reference window comprising the set of reference window sub-regions, the set of reference window sub-regions including the reference sub-region identified by the motion information.

[c24] 24.A computer readable medium including instructions for processing a compressed bitstream comprising video data, the instructions comprising: instructions for parsing a portion of the compressed bitstream before motion compensation on video data included in the portion; instructions for obtaining motion information related to the video data, the motion information comprising a set of motion vectors; instructions for storing a reference sub-region identified by the motion information in a first memory before performing motion compensation using the set of motion vectors; and instructions for performing motion compensation on the video data using the reference sub-region stored on the first memory.